

A high-level monthly briefing on operations and activities at the Department of Energy's Idaho National Engineering and Environmental Laboratory – Home of Science and Engineering Solutions. Work at the lab supports the Department's business lines of environmental quality, energy resources, national security and science.

■ ENVIRONMENTAL QUALITY – Helping “HANDSS” for Waste Management

The INEEL is demonstrating a new technology that automates radioactive and hazardous waste handling and integrates the functions of other waste handling modules designed to open drums, verify contents and remove waste. INEEL's technology uses state-of-the-art imaging to digitally identify and locate waste and communicate with a robot to retrieve items not approved for disposal. A major result of the technology is a safe environment for workers preparing wastes for disposal. This remote waste sorting station is one of four modules that are part of a larger automated system – Handling and Segregating System for 55-gallon drums (HANDSS-55). System development was funded by DOE's Savannah River Site (SRS) in South Carolina and DOE's Office of Science and Technology, and accomplished through partnership with private industry and academia. Deployment of the system at SRS is expected by May 2005.

■ NATIONAL SECURITY – New Director Bolsters Division's Efforts

Former Brig. Gen. Bob Summers, the INEEL's newly appointed director of Defense & Infrastructure Systems, is putting his extensive experience to work, advancing the Lab's National Security initiatives. Summers transitioned from the U.S. Air Force where his numerous assignments involved space and missile operations, teaching physics at the U.S. Air Force Academy, and leadership of several programs involved with the repair and maintenance of aircraft and space systems. His most recent assignment was with the Defense Threat Reduction Agency, where he was the director for Combat Support. In this role, he directed analytical and operations support to our nation's senior military commanders with an emphasis on nuclear, chemical and biological threats.

■ ENERGY RESOURCES – Lab Focuses on Alternative Fuels

The INEEL is partnering with the Greater Yellowstone/Teton Clean Cities Coalition to bring attention to National Alternative Fuel Vehicles Day Odyssey on April 11, 2002. The day is sponsored by the National Alternative Fuels Training Consortium to build awareness and enthusiasm for Alternative Fuel Vehicles as a viable option for consumer and fleet transportation choices. The coalition is developing a plan on alternative fuel options for the region. The INEEL has a fleet of 158 alternative fuel vehicles, including 109 compressed natural gas (CNG) and dual fuel vehicles, 39 liquefied natural gas (LNG) and dual fuel vehicles, seven LNG buses, one propane vehicle and two light CNG vehicles.

■ SCIENCE – INEEL Researcher Unveils Flood Gun

The INEEL's Gary Gresham has designed a new gun to combat chemical weapons – an electron flood gun. Sci-fi as it sounds, the electron flood gun is one part of a new generation of surface analysis techniques called Ion Trap SIMS (IT-SIMS) which identify chemical compounds by their molecular mass. Gresham uses the electron flood gun to direct a low energy stream onto a sample surface, and then trap the secondary ions that sputter off the sample surface. The electron flood gun enables researchers to collect both positively and negatively charged ions, enabling more accurate chemical analysis. Gresham predicts this technique will improve chemical weapon degradation product detection and analysis of cell wall structures in biological systems.

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